

Hard Hat Construction Grout

Non-shrink, Non-metallic grout

DESCRIPTION

HARD HAT CONSTRUCTION GROUT is a non-shrink, non-metallic multipurpose cement-based grout. HARD HAT CONSTRUCTION GROUT is formulated for a wide variety of grouting applications, from damp pack to flowable through a controlled, positive expansion.

Recommended applications include grouting of pump and equipment based column base plates, anchor bolts, precast and tilt-up walls.

FEATURES/BENEFITS

- Controlled positive expansion for maximum effective bearing
- Non-metallic / non-corrosive
- Pourable / pumpable versatility
- Excellent freeze / thaw resistance
- Can be extended with pea stone for deep applications
- Natural concrete gray
- Can contribute to LEED credits
- Easy to use, simple add water
- Chloride and gypsum free
- USDA Accepted

SPECIFICATIONS

Corp of Engineers CRD-C-621 Grade A, B & C
ASTM C-1107. Grade A, B & C

APPLICATION

Preparation: Remove all dirt, oil, and loose or foreign material. Any metal in contact with grout must be free of rust, oil, grease, and other foreign matter which would limit bond. Concrete surface must be sound and roughened to insure proper bonding. Prior to placing grout, surface must be saturated surface dry (SSD), if possible for a minimum of an hour. Remove all excess water before placement of grout. Bolts, base plates and equipment must be secure and rigid before placement of grout. All materials and surfaces in contact with the grout should be conditioned between 50°-80°F for proper performance. Provide heating or cooling, as necessary, to compensate for temperature extremes and changes in cure time.

Forms: Allow for the continuous placement of grout. Provisions for venting to avoid air entrapment must be made. Placing from one side, provide a 45o angle in the forms to a height suitable to provide a head of grout during placement. On all sides, provide a minimum 1" (2.54 cm) horizontal clearance between the base plate and forms. Forms should be at least 1" (2.54 cm) higher than the bottom of the base plate.

Mixing: Small quantities of grout may be hand mixed in a concrete mixing pan until lump free. For large quantities and continuous pours, mix using a mortar mixer with rubber tipped blades or appropriate grout pump for a minimum of 5 minutes. Start with minimum water requirements.

Always add water to mixer first, then slowly add powder. Use only the amount of water required for the desired placement consistency. Mix in two steps: Add 2/3 of the water, add grout, after partial mixing add the remaining 1/3 of the water for desired consistency. Thoroughly mix total quantity for an additional 2 to 3 minutes. Do not mix more than can be placed in 30 minutes.

Placing: Place continuously and quickly. Start from one side to avoid air entrapment. Be sure grout fills spaces and remains in contact with plate. DO NOT VIBRATE. A minimum of 1" (2.48 cm) vertical clearance should be maintained for base plate grouting applications. Thinner vertical clearances may require the use of another type of grout.

Curing: Grouts must be cured. Immediately water cure or cover with clean, wet rags and keep moist until final set. After final set, remove water cure or wet rags and apply an ASTM-C-309 curing compound, such as SpecChem Cure & Seal 25.

Special Conditions:

Deep application: Pre-washed and graded 3/8" (1 cm) pea gravel should be used in large applications (greater than 1' x 1') and thicker than 3" (7.62 cm) as follows:

3"-5" (7.62-12.7 cm): Add 25% of 3/8" (1 cm) pea gravel per 50 lb bag of grout.

5" (12.7 cm) and over: Add 50% of

3/8" (1 cm) pea gravel per 50 lb bag of grout.
Place in 6" lifts with proper reinforcement

TYPICAL PERFORMANCE DATA

	Plastic	Flowable	Fluid
Water / 50 lb.	6.30-6.85 pints	6.85-7.75 pints	7.75-8.35 pints

Compressive Strength (ASTM C-109)

	Plastic	Flowable	Fluid
1 day	4,000 psi	3,100 psi	1,450 psi
3 days	5,500 psi	5,000 psi	3,700 psi
7 days	8,100 psi	6,900 psi	6,200 psi
28 days	10,200 psi	8,400 psi	8,100 psi

Expansion Percentage (ASTM C-1090)

	Plastic	Flowable	Fluid
1 day	0.07	0.03	0.02
3 days	0.07	0.03	0.02
14 days	0.07	0.03	0.02
28 days	0.07	0.03	0.02

Flexural Strength (ASTM C -78) = 1415 psi @ 28 days

Tensile Strength (ASTM C-190) = 620 psi @ 28 days

Split Tensile Strength (ASTM C 469) = 735 psi @ 28 days

Note: The data shown is based on controlled laboratory testing. Reasonable variation from test results shown can be expected. Field and laboratory testing should be controlled on the basis of the desired placing consistency, rather than strictly on water content.

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Hot weather conditions: Accelerates setting time and causes premature drying of the grout. Keep the grout cool. Provide shade for area to be grouted. Use cool or chilled mixing water. Protect grout from direct sun exposure for up to 24 hours after grouting. For additional information, refer to ACI 305 (Recommended Practices for Hot Weather Concreting).

Cold weather conditions: Retards strength gain and set time. Warm the grout material above 50°F. Raise the temperature of the area to be grouted with space heaters or steam. Warm the mixing water. Cover and insulate the grout to retain warmth. The minimum temperature (ambient, substrate, and grout) for grouting is 40°F (5°C). For additional information, refer to ACI 306 (Recommended Practices for Cold Weather Concreting)

PACKAGING

50 lb (22.7Kg) multiple plastic lined bag will yield approximately 0.45 cu. ft. in a fluid condition.

50% by weight extension (25 lbs) of 3/8" pea stone will yield approximately 0.59 cu. ft.

STORAGE/SHELF LIFE

HARD HAT CONSTRUCTION GROUT should be stored in a cool, dry interior area. At no time should material be exposed to high moisture, rain, or snow conditions. When stored in the original, tightly closed container, the shelf life is one year from the date of manufacture.

LIMITATIONS/PRECAUTIONS

DO NOT place at temperatures below 40°F (5°C) or if the temperature is expected to fall below 40°F (5°C) in the next twenty four hour period unless special provisions are followed. At low temperatures, water requirement should be field tested.

When nearby equipment causes vibration of the grout, such equipment should be shut down for a period of 24 hours (at 73°F (23°C)). DO NOT mix over 5 minutes. DO NOT over water; this can cause bleeding or separation. DO NOT retemper. DO NOT add cement, sand, or admixtures.

Avoid hazards by following all precautions found in the Material Safety Data Sheets (MSDS), product labels, and technical literature

WARRANTY

NOTICE-READ CAREFULLY CONDITIONS OF SALE

The manufacturer offers this product for sale subject to and limited by the warranty which may only be varied by written agreement of a duly authorized corporate officer of The manufacturer. No other representative of or for The manufacturer is authorized to grant any warranty or to waive limitation of liability set forth below.

WARRANTY LIMITATION

The manufacturer warrants this product to be free of manufacturing defects. If the product when purchased was defective and was within use period indicated on container or carton, when used, The manufacturer will replace the defective product with new product without charge to the purchaser. The manufacturer makes no other warranty, either expressed or implied, concerning this product. There is no warranty of merchantability. NO CLAIM OF ANY KIND SHALL BE GREATER THAN THE PURCHASE PRICE OF THE PRODUCT IN RESPECT OF WHICH DAMAGES ARE CLAIMED.

INHERENT RISK

Purchaser assumes all risk associated with the use or application of the product.